REMARKS

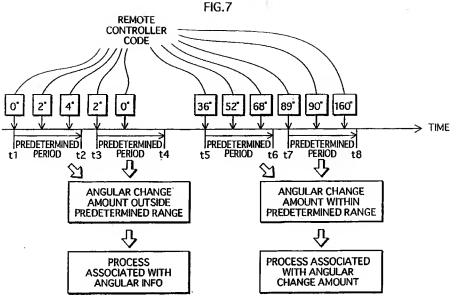
Applicant wishes to thank Supervisor Patent Examiner Awad and Examiner Bray for the courtesies extended in arranging a Telephone Conference on December 21, 2010 in the holiday season. Applicant submitted comments in its Request for a Telephone Interview which basically summarizes the issues that were presented and discussed in the Telephone Interview.

During the Telephone Interview, a question was raised as to support for the previously amended language "usable to make a directional input and unusable to make a rotational input by a user, the directional input unit being."

Our user interface system is not only a directional input unit as shown for example in Figure 3, but it is also the system elements disclosed in Figure 4 and Figure 1 so that our directional input unit can be enabled to generate a controller code in a digital format illustrated for example, in Figure 5 by our controller code generator 402 as shown in Figure 4.

As further shown in the flowchart of Figure 6 hereinafter, the computer code is repetitively being generated and stored at intervals of 125 microseconds. See Paragraph [0149]. The reception of the computer control codes are measured within a predetermined time period in order to effectuate increasing the number of processes that can be executable in response to a user operation of the directional input device, as disclosed in the following Figure 7:

FIG.7



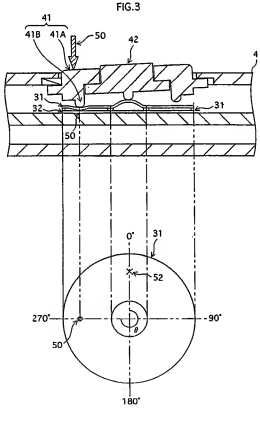
As can be determined, the inputs within predetermined time periods and within certain angular change ranges can render unusable certain rotational inputs by the user, for example as described as follows:

> [0019] Here, each of the directions available for an input to the operating member may be expressed by 360° with respect to the reference direction at 0°. The predetermined range may be 10 ° <|amount of angular change|<160..
>
> [0020] With the above-stated structures, when the calculated amount of angular change is (i) less than 10° or (ii) equal to or greater than 161°, a corresponding input operation is judged as a directional input operation. Thus, even if a user makes a directional input operation with unintentional shaking of his hand or finger, it is avoided that the input operation is judged as a rotational operation. Further, when two inputs specifying directions are successively made within the predetermined time period and the amount of angular change between the two directions is equal to or greater than 161°, such inputs are judged as two different input operations. (underline added)

Accordingly, with the above support for this claim language inserted in other independent claims and Claim 1, it is believed that applicant has responded to the Examiner's request for support in our specification and drawings.

We claim, in a user interface system, a directional input device that can be utilized in a relatively simply manner by an operator to input electronic signals in a quick and efficient manner without adding any unnecessary complex mechanical structure as a result of our respective calculating unit, judgment unit and processing unit. A circular disc operating member 41 is capable of rotating and being depressed to identify a specific location, such as a portion 50. A signal is generated identifying the specific location such as 270°. A central button 42 can be pressed downward to provide an entry for selecting the particular position.

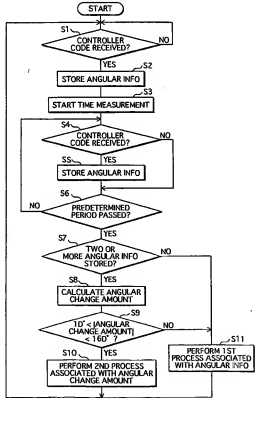
FIG.3



Upon the selection of a specific rotational location, an entry controller code is generated as shown in Figure 5, that is responsive to the inputted angular information to define a binary code that can be evaluated to enable a particular operation to be executed.

As is graphically seen in the flowchart of Figure 6, it is possible to enter and store two or more pieces of angular information and by using a timeline, plus for example, an algorithm to minimize erroneous movements (hand shaking), the structure in Figure 3 is utilized to perform an expected conventional entering of a signal based on, for example, a lookup table associated with the first angular information and additionally with the same structure, provide a second processing associated with the second angular information within a predetermined time period that is entered to produce an appropriate controlled response, see steps S11 and S10.

FIG.6



Claim 1 increases the number of processes executable with a directional input unit that is (1) usable to make a directional input and (2) unusable to make a rotational input by a user. This advantageous effect is achieved by associating each direction available for input with a process to be executed and also associating each amount of change between two directional input successively made within a predetermined time period with a process to be executed.

> [0040] With the above-stated structure, a user can select through a first process a desired option from among a group of n options currently displayed in a spiral array. The user can cause a different group of n options to be displayed through a second process. The group displayed through the second process includes new options displacing a corresponding number of options from the currently displayed group. (underline added)

It should be noted that if a directional input unit is always usable to make both directional and rotational inputs or to make a relatively large number of different input operations, there is no need to calculate an amount of change (i.e., rotational amount in a rotational direction) between two directional inputs. Naturally, there is no need to switch between a process associated with each of the two directional inputs and a process associated with the rotational amount, depending on whether the rotational amount falls within a predetermined range.

The Examiner rejected Claims 1-7 and 17-19 as being obvious over *Goldenburg et al.* (U.S. Patent No. 6,636,197) in view of *Fitzmaurice et al.* (U.S. Patent No. 5,973,669) and *Mukai et al.* (U.S. Patent Publication 2002/0158851).

For purposes of discussion the following elements in our independent Claim 1 will be discussed:

> 1. A user interface system comprising:
>
> (Element A) a directional input unit having an operating member usable to make a directional input and unusable to make a rotational input by a user, the directional input unit being operable to receive at a point in time an

input specifying one of at least three different directions, in response to a user operation of touching the operating member;

(Element B) a calculating unit operable to calculate an amount of change from a first direction to a second direction, when the directional input unit receives an input specifying the first direction followed within a predetermined time period by an input specifying the second direction;

(Element C) a judging unit operable to judge whether the calculated amount of change falls within a predetermined range; and

(Element D) a processing unit operable to perform a first process associated with each of the first and second directions when the judging unit judges negatively, and perform a second process associated with the amount of change when the judging unit judges affirmatively.

Goldenburg et al. teaches an operating member 26 usable by a user to make a directional input as well as to make a rotational input. *Goldenburg et al.* does not disclose an operating member that is usable to make a directional input and unusable to make a rotational input.

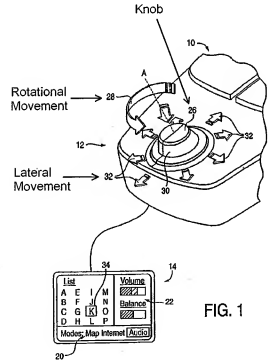


FIG. 1

Goldenburg et al. states as follows:

> In the described embodiment, knob 26 rotates in a single rotary degree of freedom about an axis extending out of the knob, such as axis A, as shown by arrow 28. The user preferably grips or contacts the circumferential surface of the knob 26 and rotates it a desired amount. Colum 3, Lines 128-23.
>
> The knob 26 is preferably able to be moved by the user in one or more directions in a plane approximately perpendicular (orthogonal) to the axis A of rotation ("transverse" or "lateral" motion). Column 5, Lines 28-35.

Goldenburg et al. discloses that in response to an input specifying a direction, a process associated with the direction is executed, and that in response to a rotational input, a process associated with the amount of rotation is executed. *Goldenburg et al.* is silent on any configuration for calculating an amount of change between two successively made directional inputs and switching, depending on the calculated change of amount, a process associated with each of the two directional inputs and a process associated with the calculated amount of change.

Thus, *Goldenburg et al.* fails to disclose Elements A-D of Claim 1.

The *Fitzmaurice et al.* reference taught a video editing system capable of using one scrub wheel to move video sequences forward or backward at various speeds.

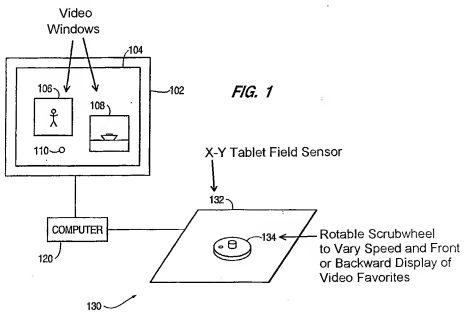


FIG. 1

The scrubwheel has characteristics of a computer mouse but with an active sensing tablet 132 that can sense the location of a position indicator 204 such as a coil to change the electromagnetic field produced by the tablet. See Column 3, Lines 49 to 55. The computer can determine the position of multiple windows or screens having edible video sequences and the scrubwheel is moved to a position on the tablet corresponding to a window. See Figure 1, windows 106, 108.

The cursor 110, equivalent to the position of the coil 204 automatically enables a rotation of video sequences in an editing mode by the scrubwheel.

As shown in Figure 3, an outer dial 302 (206, Figure 2) carries a position signal or indicator 208 wherein a degree of movement of the wheel determines the speed and direction of display of the video images.

The *Fitzmaurice et al.* reference only provides a user interface system in the form of a scrubwheel, where an X-Y coordinate movement of the scrubwheel body by itself determines a chosen location on a window wherein a rotating wheel enables by rotation, a directional input of a front or backward moving of the images with the rotation of the wheel. It must, however, be usable to provide such a rotational input by the user and the respective different directions are only two, a clockwise or counterclockwise direction, and the degree of movement simply indicates the speed of flipping images.

The innovations in *Fitzmaurice et al.* is actually the association of the X-Y Tablet Field Sensor with location of video windows so that basically one scrubwheel can be used instead of a separate scrubwheel for each video window. Thus, the scrubwheel per se functions in a conventional manner and is not designed to provide a unique plurality of secondary processes that can be performed with this same input device.

There is no teaching of a calculating unit or a judging unit or a processing unit defined by Claim 1 above. Accordingly, *Fitzmaurice et al.* fails to teach fully the contents of respective Element A through Element D of Claim 1.

Finally, the *Mukai et al.* reference is directed to a touch panel that permits a pen to input a signal in a particular area by a double tap operation. The pressure employed for putting in the first tap is greater than the pressure employed for the second tap. See Paragraph [0005].

Clearly, *Mukai et al.* fails to disclose Element A, namely an operating member usable to make a directional input and unusable to make a rotational input of our Claim 1. While *Mukai et al.* suggests tapping a pen on a touch screen at different pressures within a predetermined time period, it does not teach switching, in response to two successive directional inputs with a process associated with each directional input and a process associated with an amount of a change. Accordingly, *Mukai et al.* would also fail to correct the deficiencies of the prior references for the features set forth in Elements B-D of Claim 1.

None of the cited references alone or in combination disclose a directional input unit as defined in Element A that would permit a user to make a directional input and being unusable to make a rotational input by the user, nor does it disclose any configuration capable of providing the claimed features of Elements B-D for increasing the number of processes executable by manually operating the directional input unit, even when the number of directions available for input with the directional input unit is limited.

As set forth above, *Goldenburg et al., Fitzmaurice et al.*, and *Mukai et al.* collectively do not teach any directional input unit (Element A of Claim 1) usable to make a directional input and unusable to make a rotational input by a user, nor any configuration (Elements B-D of Claim 1) for increasing the number of processes executable by manually operating the

directional input unit, although the number of directions available for input with the directional input unit is limited.

As noted in the MPEP at §2143.02:

> A rationale to support a conclusion that a claim would have been obvious is that all the claimed elements were known in the prior art and one skilled in the art could have combined the elements as claimed by known methods with no change in their respective functions, and the combination would have yielded nothing more than predictable results to one of ordinary skill in the art. *KSR International Co. v. Teleflex Inc.*, 550 U.S. ___, ___, 82 USPQ2d 1385, 1395 (2007); *Sakraida v. AG Pro, Inc.*, 425 U.S. 273, 282, 189 USPQ 449, 453 (1976); *Anderson's-Black Rock, Inc. v. Pavement Salvage Co.*, 396 U.S. 57, 62-63, 163 USPQ 673, 675 (1969); *Great Atlantic & P. Tea Co. v. Supermarket Equipment Corp.*, 340 U.S. 147, 152, 87 USPQ 303, 306 (1950). (underline added)

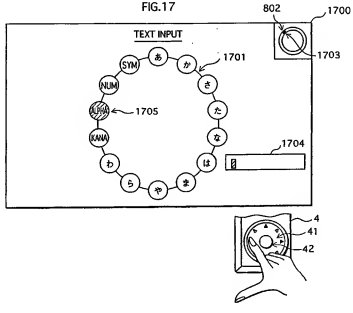
According to Claim 1, having a directional input unit usable to make a directional input and unusable to make a rotational input by a user, each direction available for input with the directional input unit is associated with a special process to be executed and each range of amount of change is associated with a specific process to be executed. By virtue of this configuration, Claim 1 achieves an increase in the number of processes executable by manually operating the directional input unit although the number of directions available for input with the directional input unit are limited.

During the interview a proposed amendment was discussed by SPE Awad who requested elaborating on what was a second process associated with the amount of change when the judging unit judges affirmatively. The process of producing a plurality of second processes provides various selectable options that can be selected from the directional input unit that are different from the first process plurality of options provided to the user. Applicant appreciates the suggestion and is presently evaluating that suggestion relative to the specific support in the embodiments of our present invention.

Applicant would request a review of the currently dependent Claim 11 from Claim 1 which is believed to be somewhat directed to the suggestion of Examiner Awad.

Reference can be made to Example 4 and a description set forth in our Paragraphs [0190] through [0199] which can be implemented with our directional input unit (Element A) and the support of the respective calculating unit, judging unit and processing unit as defined in independent Claim 1.

Thus, our directional input unit 4 can be operated in conjunction with a display on the screen as shown in Figure 17, as follows:



In this embodiment, a first process can be associated with respective angular movements for selecting symbols representative of languages or optionally, the English alphabet or numbers, or even symbols. See Figure 18.

Thus, individual pieces of angular information and processes to be performed can be stored in a table associating the individual amounts of change with rotational directions.

Accordingly, during use by the user, the calculating unit repetitively calculates the amount of change from a first direction to a second direction within the predetermined time period.

The judging unit can then determine whether the calculated amount of change falls within a predetermined range as set forth in dependent Claim 11, when the judging unit judges negatively, the processing unit performs the first process so that a plurality of options are available in each input of a directional operation whereby a user can consider the various options that are available beyond the first group of options.

When the judging unit judges affirmatively, the processing unit then refers to a table to perform a second process so that when the dial is rotated in a rotational direction in an amount associated with a calculated amount of change, it is capable of selecting an option, for example one of the letters of an alphabet or a number which can be inputted as text. As can be appreciated, the first process, selecting for example, between the groups of Japanese symbols, the English alphabet, numerals and symbols, is different from the second plurality of options that can be, for example, picking one of the 26 alphabetic letters in the English language.

Accordingly, our directional input unit with a rotable operative operating member can make a directional input and can further be unusable to make a predetermined range of a rotational input by a user within a predetermined time period. The directional input unit can receive at a point in time, an input specifying one of three different directions in response to a user operation, for example in selecting one of the plurality of options available in the first

process associated with each of the first and second directions, when the judging unit judges negatively.

Alternatively, when the judging unit judges affirmatively, the second process with a plurality of options, for example the English alphabet with 26 letters, can be associated with an amount of change to enable a selection of an individual letter for inputting text. This is accomplished with a unique directional input unit and processing of our current invention.

It is believed that these features are adequately set forth in Claim 11 and represent in combination with Claim 1 allowable subject matter.

As can be appreciated, the principal references of *Goldenburg et al., Fitzmaurice et al.* and *Mukai et al.* do not teach these claim elements, and the Office Action relied upon a further combination of *Nguwen* (U.S. Patent No. 7,036,091) to purportedly teach a group of options in an annular array with a selective position movable to any of the options to indicate which option is currently selected.

More specifically, *Nguwen* was cited for providing sets of options between a first concentrically mounted menu and subsequently, a second or even a third circumferentially mounted set of options on a display screen. *Nguwen*, however, used a conventional controller 106 as shown in Figure 2, and provides no teaching or suggestions of any rotational input by a directional unit operating member. In fact, the *Nguwen* reference is primarily directed to display images as shown in Figures 4-9 wherein a rotational alignment of each of the rings or levels of options is arranged relative to a stationary selection indicator 428, thereby enabling a graphical linkage between the options in a hierarchal manner.

Thus, it is respectfully submitted that dependent Claim 11 is representative of the suggestion of allowable claim language discussed during the interview.

Claims 3 and 4 were rejected over *Goldenburg et al., Fitzmaurice et al., Mukai et al.* and further in view of *Trent, Jr. et al.* (U.S. Patent No. 7,466,307).

Trent, Jr. et al., however, simply taught a reference direction for which angles can be measured. It does not address the features set forth in Claim 1, that were lacking from the combined teachings of the rejection of Claim 1.

Claims 5 and 6 were again rejected over *Goldenburg et al., Fitzmaurice et al., Mukai et al.* and further taken in view of *Masudaya* (U.S. Patent Publication 2001/0040562).

Masudaya was cited for teaching a counting unit. However, the rejection refers to the *Trent, Jr. et al.* reference. In any event, neither the *Masudaya* nor the *Trent Jr., et al.* references resolve the deficiencies of the principally relied upon three references.

Claim 8 was rejected over *Goldenburg et al., Fitzmaurice et al., Mukai et al.* and *Inouye et al.* (U.S. Patent Publication 2003/0085793).

Inouye et al. was primarily cited for teaching a physical configuration of an input unit, but certainly does not teach nor suggest its operative relationship, as defined with a calculating unit, judging unit and processing unit, in our independent claims.

Claim 10 was rejected over *Goldenburg et al., Fitzmaurice et al., Mukai et al.* and *Duarte* (U.S. Patent Publication 2003/0043206. *Duarte* simply showed a plurality of files and folders in an annular array.

Claims 12 and 13 were rejected over *Goldenburg et al., Fitzmaurice et al., Mukai et al.* when taken in view of *Robin et al.* (U.S. Patent Publication 2003/0095096), which defined a playback unit that can play back content with an audio adjustment of the volume. It does not teach, however, the directional unit input and the particular relationship of an operating member with a rotational input and directional input as defined in our independent claims.

Claims 14 and 15 were rejected over *Goldenburg et al., Fitzmaurice et al., Mukai et al.* and *Yamaguchi et al.* (U.S. Patent No. 6,710,771).

Yamaguchi et al. was apparently cited for the teaching of a chart with a possibility of scaling up or down within the chart, but it certainly does not address the specific directional input unit and functions of our independent claims.

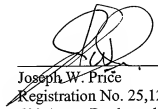
Claim 16 was rejected over *Goldenburg et al., Fitzmaurice et al., Mukai et al.* and *SanGiovanni* (U.S. Patent Publication 2002/0101441). *SanGiovanni* was cited for teaching a managing unit that can rank and manage a plurality of options in a spiral array. This teaching, however, does not disclose the claimed features missing from the principal three references.

It is believed that applicant has met the requirements of 37 CFR §1.116 and that the present claims are now in condition for allowance or alternatively, should be entered for purposes of appeal.

If the Examiner believes that any additional modification to our claims would be in the interest of furthering the prosecution of the present application, the undersigned attorney would appreciate a telephone conference.

Very truly yours,

SNELL & WILMER L.L.P.



Joseph W. Price
Registration No. 25,124
600 Anton Boulevard, Suite 1400
Costa Mesa, CA 92626
Tel: 714-427-7420
Fax: 714-427-7799